

§ 30.71

10 CFR Ch. I (1-1-08 Edition)

[See footnotes at end of this table]

Element (atomic number)	Isotope	Col. I	Col. II
		Gas concentration μCi/ml ¹	Liquid and solid concentration μCi/ ml ²
Zinc (30)	Y 93		3×10 ⁻⁴
	Zn 65		1×10 ⁻³
	Zn 69m		7×10 ⁻⁴
	Zn 69		2×10 ⁻²
Zirconium (40)	Zr 95		6×10 ⁻⁴
	Zr 97		2×10 ⁻⁴
Beta and/or gamma emitting byproduct material not listed above with half-life less than 3 years.		1×10 ⁻¹⁰	1×10 ⁻⁶

Footnotes to Schedule A:
¹ Values are given only for those materials normally used as gases.
² μCi/gm for solids.
 NOTE 1: Many radioisotopes disintegrate into isotopes which are also radioactive. In expressing the concentrations in Schedule A, the activity stated is that of the parent isotope and takes into account the daughters.
 NOTE 2: For purposes of §30.14 where there is involved a combination of isotopes, the limit for the combination should be derived as follows:
 Determine for each isotope in the product the ratio between the concentration present in the product and the exempt concentration established in Schedule A for the specific isotope when not in combination. The sum of such ratios may not exceed "1" (i.e., unity).
 Example:

$$\frac{\text{Concentration of Isotope A in Product}}{\text{Exempt concentration of Isotope A}} + \frac{\text{Concentration of Isotope B in Product}}{\text{Exempt concentration of Isotope B}} \leq 1$$

[30 FR 8185, June 26, 1965, as amended at 35 FR 3982, Mar. 3, 1970; 38 FR 29314, Oct. 24, 1973; 59 FR 5520, Feb. 7, 1994]

§ 30.71 Schedule B.

Byproduct material	Microcuries	Byproduct material	Microcuries
Antimony 122 (Sb 122)	100	Dysprosium 165 (Dy 165)	10
Antimony 124 (Sb 124)	10	Dysprosium 166 (Dy 166)	100
Antimony 125 (Sb 125)	10	Erbium 169 (Er 169)	100
Arsenic 73 (As 73)	100	Erbium 171 (Er 171)	100
Arsenic 74 (As 74)	10	Europium 152 9.2 h (Eu 152 9.2 h)	100
Arsenic 76 (As 76)	10	Europium 152 13 yr (Eu 152 13 yr)	1
Arsenic 77 (As 77)	100	Europium 154 (Eu 154)	1
Barium 131 (Ba 131)	10	Europium 155 (Eu 155)	10
Barium 133 (Ba 133)	10	Fluorine 18 (F 18)	1,000
Barium 140 (Ba 140)	10	Gadolinium 153 (Gd 153)	10
Bismuth 210 (Bi 210)	1	Gadolinium 159 (Gd 159)	100
Bromine 82 (Br 82)	10	Gallium 67 (Ga 67)	100
Cadmium 109 (Cd 109)	10	Gallium 72 (Ga 72)	10
Cadmium 115m (Cd 115m)	10	Germanium 68 (Ge 68)	10
Cadmium 115 (Cd 115)	100	Germanium 71 (Ge 71)	100
Calcium 45 (Ca 45)	10	Gold 195 (Au 195)	10
Calcium 47 (Ca 47)	10	Gold 198 (Au 198)	100
Carbon 14 (C 14)	100	Gold 199 (Au 199)	100
Cerium 141 (Ce 141)	100	Hafnium 181 (Hf 181)	10
Cerium 143 (Ce 143)	100	Holmium 166 (Ho 166)	100
Cerium 144 (Ce 144)	1	Hydrogen 3 (H 3)	1,000
Cesium 129 (Cs 129)	100	Indium 111 (In 111)	100
Cesium 131 (Cs 131)	1,000	Indium 113m (In 113m)	100
Cesium 134m (Cs 134m)	100	Indium 114m (In 114m)	10
Cesium 134 (Cs 134)	1	Indium 115m (In 115m)	100
Cesium 135 (Cs 135)	10	Indium 115 (In 115)	10
Cesium 136 (Cs 136)	10	Iodine 123 (I 123)	100
Cesium 137 (Cs 137)	10	Iodine 125 (I 125)	1
Chlorine 36 (Cl 36)	10	Iodine 126 (I 126)	1
Chlorine 38 (Cl 38)	10	Iodine 129 (I 129)	0.1
Chromium 51 (Cr 51)	1,000	Iodine 131 (I 131)	1
Cobalt 57 (Co 57)	100	Iodine 132 (I 132)	10
Cobalt 58m (Co 58m)	10	Iodine 133 (I 133)	1
Cobalt 58 (Co 58)	10	Iodine 134 (I 134)	10
Cobalt 60 (Co 60)	1	Iodine 135 (I 135)	10
Copper 64 (Cu 64)	100	Iridium 192 (Ir 192)	10
		Iridium 194 (Ir 194)	100
		Iron 52 (Fe 52)	10

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Byproduct material	Microcuries
Iron 55 (Fe 55)	100
Iron 59 (Fe 59)	10
Krypton 85 (Kr 85)	100
Krypton 87 (Kr 87)	10
Lanthanum 140 (La 140)	10
Lutetium 177 (Lu 177)	100
Manganese 52 (Mn 52)	10
Manganese 54 (Mn 54)	10
Manganese 56 (Mn 56)	10
Mercury 197m (Hg 197m)	100
Mercury 197 (Hg 197)	100
Mercury 203 (Hg 203)	10
Molybdenum 99 (Mo 99)	100
Neodymium 147 (Nd 147)	100
Neodymium 149 (Nd 149)	100
Nickel 59 (Ni 59)	100
Nickel 63 (Ni 63)	10
Nickel 65 (Ni 65)	100
Niobium 93m (Nb 93m)	10
Niobium 95 (Nb 95)	10
Niobium 97 (Nb 97)	10
Osmium 185 (Os 185)	10
Osmium 191m (Os 191m)	100
Osmium 191 (Os 191)	100
Osmium 193 (Os 193)	100
Palladium 103 (Pd 103)	100
Palladium 109 (Pd 109)	100
Phosphorus 32 (P 32)	10
Platinum 191 (Pt 191)	100
Platinum 193m (Pt 193m)	100
Platinum 193 (Pt 193)	100
Platinum 197m (Pt 197m)	100
Platinum 197 (Pt 197)	100
Polonium 210 (Po 210)	0.1
Potassium 42 (K 42)	10
Potassium 43 (K 43)	10
Praseodymium 142 (Pr 142)	100
Praseodymium 143 (Pr 143)	100
Promethium 147 (Pm 147)	10
Promethium 149 (Pm 149)	10
Rhenium 186 (Re 186)	100
Rhenium 188 (Re 188)	100
Rhodium 103m (Rh 103m)	100
Rhodium 105 (Rh 105)	100
Rubidium 81 (Rb 81)	10
Rubidium 86 (Rb 86)	10
Rubidium 87 (Rb 87)	10
Ruthenium 97 (Ru 97)	100
Ruthenium 103 (Ru 103)	10
Ruthenium 105 (Ru 105)	10
Ruthenium 106 (Ru 106)	1
Samarium 151 (Sm 151)	10
Samarium 153 (Sm 153)	100
Scandium 46 (Sc 46)	10
Scandium 47 (Sc 47)	100
Scandium 48 (Sc 48)	10
Selenium 75 (Se 75)	10
Silicon 31 (Si 31)	100
Silver 105 (Ag 105)	10
Silver 110m (Ag 110m)	1
Silver 111 (Ag 111)	100
Sodium 22 (Na 22)	10
Sodium 24 (Na 24)	10
Strontium 85 (Sr 85)	10
Strontium 89 (Sr 89)	1
Strontium 90 (Sr 90)	0.1
Strontium 91 (Sr 91)	10
Strontium 92 (Sr 92)	10
Sulphur 35 (S 35)	100
Tantalum 182 (Ta 182)	10
Technetium 96 (Tc 96)	10
Technetium 97m (Tc 97m)	100
Technetium 97 (Tc 97)	100
Technetium 99m (Tc 99m)	100

Byproduct material	Microcuries
Technetium 99 (Tc 99)	10
Tellurium 125m (Te 125m)	10
Tellurium 127m (Te 127m)	10
Tellurium 127 (Te 127)	100
Tellurium 129m (Te 129m)	10
Tellurium 129 (Te 129)	100
Tellurium 131m (Te 131m)	10
Tellurium 132 (Te 132)	10
Terbium 160 (Tb 160)	10
Thallium 200 (Tl 200)	100
Thallium 201 (Tl 201)	100
Thallium 202 (Tl 202)	100
Thallium 204 (Tl 204)	10
Thulium 170 (Tm 170)	10
Thulium 171 (Tm 171)	10
Tin 113 (Sn 113)	10
Tin 125 (Sn 125)	10
Tungsten 181 (W 181)	10
Tungsten 185 (W 185)	10
Tungsten 187 (W 187)	100
Vanadium 48 (V 48)	10
Xenon 131m (Xe 131m)	1,000
Xenon 133 (Xe 133)	100
Xenon 135 (Xe 135)	100
Ytterbium 175 (Yb 175)	100
Yttrium 87 (Y 87)	10
Yttrium 88 (Y 88)	10
Yttrium 90 (Y 90)	10
Yttrium 91 (Y 91)	10
Yttrium 92 (Y 92)	100
Yttrium 93 (Y 93)	100
Zinc 65 (Zn 65)	10
Zinc 69m (Zn 69m)	100
Zinc 69 (Zn 69)	1,000
Zirconium 93 (Zr 93)	10
Zirconium 95 (Zr 95)	10
Zirconium 97 (Zr 97)	10
Any byproduct material not listed above other than alpha emitting byproduct material	0.1

[35 FR 6427, Apr. 22, 1970, as amended at 36 FR 16898, Aug. 26, 1971; 59 FR 5519, Feb. 7, 1994; 72 FR 55926, Oct. 1, 2007]

§ 30.72 Schedule C—Quantities of radioactive materials requiring consideration of the need for an emergency plan for responding to a release.

Radioactive material ¹	Release fraction	Quantity (curies)
Actinium-228	0.001	4,000
Americium-241 .....	.001	2
Americium-242 .....	.001	2
Americium-243 .....	.001	2
Antimony-124 .....	.01	4,000
Antimony-126 .....	.01	6,000
Barium-133 .....	.01	10,000
Barium-140 .....	.01	30,000
Bismuth-207 .....	.01	5,000
Bismuth-210 .....	.01	600
Cadmium-109 .....	.01	1,000
Cadmium-113 .....	.01	80
Calcium-45 .....	.01	20,000
Californium-252 .....	.001	9 (20 mg)
Carbon-14 (non-carbon dioxide) .....	.01	50,000
Cerium-141 .....	.01	10,000
Cerium-144 .....	.01	300
Cesium-134 .....	.01	2,000
Cesium-137 .....	.01	3,000